REMARKS

Claims 1-16 are pending in this application. By this Amendment, Applicants amend claims 1 and 11 and cancel claims 2 and 12. Applicant respectfully requests reconsideration of the pending claims at least in light of the following remarks.

The Office Action rejects claim 16 as indefinite. Applicant respectfully traverses the rejection.

The Office Action alleges that the term "unsatisfiable" is indefinite. However, this term is well known in at least the arts of Boolean algebra and computer programming theory as describing a condition of a constraint (i.e., either satisfiable or unsatisfiable). Thus, the skilled artisan would understand the term and the term is definite.

The Office Action rejects claims 1-16 under 35 U.S.C. §101 as directed to non-statutory subject matter, alleging that the subject matter of claims are not useful in the context of §101 because they lack specificity and do not have a tangible result. Applicant respectfully traverses the rejection.

In alleging that the subject matter of claims 1-16 lack specificity, the Office Action simply alleges that terms within the claims are not specific. However, the terms identified by the Office Action are specific terms of art well known in at least the arts of Boolean algebra and computer programming theory as evidenced by, for example, Freuder, "A Sufficient Condition for Backtrack-Bounded Search," Journal of the Association for Computing Machinery, Vol. 32, No. 4, pp. 755-761, October 1985; Dechter et al., "Network-based Heuristics for Constraint-Satisfaction Problems," Artificial Intelligence, 34, pp. 1-38, 1988; and U.S. Patents 5,438,511, 5,727,222, 5,819,210, 5,903,860 and 6,064,953 , each of which is incorporated into Applicant's disclosure by reference. As the terms used in the claims are specific, the claims 1-16 do not lack specificity.

In alleging that the subject matter of claim 1-16 lack a tangible result, the Office Action simply alleges that the subject matter of those claims is abstract. Applicants respectfully disagree with the Office Actions assertion that the claims recite abstract subject matter. In particular, the Office Action alleges that the claimed and disclosed subject matter deal "with the concept of unsatisfyability which is strongly abstract." However, the Office Action is mistaken as the claims deal with a method for satisfying (i.e., solving) the previously unsatisfyable.

Furthermore, the PTO's interim guidelines for examination under §101 (guidelines) printed in the November 22, 2005 Official Gazette Notices clearly state that "the conclusion that a particular claim includes an abstract idea does not end the inquiry" (citing *Diamond v. Diehr*, 450 U.S. 175, 187 (1981)), rather "an abstract idea when practically applied to a useful end is eligible for a patent" (citing *State Street Bank & Trust Co. v. Signature Financial Group*, 149 F.3d 1368,1375 (Fed. Cir. 1998)) Claims 1-16 are practically applied to a useful end in that they solve nogood databases, and in particular in a manner such that a result of the conjunction of contexted disjunctions is backtrack-free or the result of the conjunction of contexted disjunctions reduces to false (see, e.g., claims 1 and 10 and paragraphs [0004] - [0014]). Thus, claims 1-14 are patentable under §101.

The Office Action rejects claims 1-14 under 35 U.S.C. §102(b) over U.S. Patent No. 6,102,969 to Christianson et al. (hereinafter "Christianson"). Applicant respectfully traverses the rejection.

Applicants maintain that Christian fails to disclose any of "generating a representation comprising a plurality of contexted disjunctions," "conjoining all of the contexted disjunctions to form a conjunction of contexted disjunctions," or "storing the representation as the conjunction of contexted disjunctions," recited in claim 1 or "a storage device that

stores a representation comprising a plurality of contexted disjunctions" or "a processor that conjoins all of the contexted disjunctions to form a conjunction of contexted disjunctions and replaces the representation with the conjunction of contexted disjunctions," recited in claim 11.

This rejection is based on the Office Action's assumption that the network information sources disclosed in Christianson are equivalent to Applicant's claimed "contexted disjunctions." However, as discussed and defined in detail in Applicant's specification,[1] contexted disjuctions are specific to constraint satisfaction problems and are a disjunction including propositional Boolean variables whose expression only holds true in a given context (paragraph [0020]). This type of propositional variable is simply not disclosed in Christianson. Rather, Christianson discloses listing information sources according to relevance, the information sources having no propositional Boolean variables whose expression only holds true in a given context. Thus, Christianson fails to disclose contexted disjuctions, as recited in claims 1-14.

Furthermore, the conjunction of this type of propositional variable is not disclosed in Christianson either (see, e.g., paragraph [0024]-[0028] for an example of conjoining contexed disjuctions). In particular, Christianson simply ranks network information sources according to relevance. Such a ranking fails to correspond to conjoining as defined in Applicants' specification. Thus, Christianson fails to disclose conjoining contexted disjuctions, as recited in claims 1-14.

Still further, Christians fails to disclose or even contemplate the concept of a nogood database or nogoods. As clearly defined in Applicant's specification, a nogood is "a

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[1]   As properly recognized by the Office Action, claims may be given their broadest reasonable interpretation "in light of the supporting disclosure." *In re Morris*, 127 F.3d 1048 (Fed. Cir. 1997) (emphasis added).

propositional variable or a conjunction of propositional variables whose associated constraints are unsatisfiable in the context of the current problem." Applicants fail to see how Christian discloses any unsatisfiable variables, let alone any propositional variables whose associated constraints are unsatisfiable. That is, as discussed above, Christians discloses a method of listing information sources according to relevance, which does not include unsatisfiable variables.

Because Christianson fails to disclose both contexted disjuctions and conjoining contexted disjuctions, Christianson cannot reasonably be considered to disclose any of "generating a representation comprising a plurality of contexted disjunctions," "conjoining all of the contexted disjunctions to form a conjunction of contexted disjunctions," "storing the representation as the conjunction of contexted disjunctions," or "nogoods," recited in claim 1 or "a storage device that stores a representation comprising a plurality of contexted disjunctions," "a processor that conjoins all of the contexted disjunctions to form a conjunction of contexted disjunctions and replaces the representation with the conjunction of contexted disjunctions," or "nogoods," recited in claim 11, claims 1 and 11 are patentable over Christianson.

Further, Applicant respectfully submits that claims 2-10 and 12-16 are patentable for at least the reasons the claims 1 and 11 are patentable, as well as for the additional features they recite. Applicant respectfully requests withdrawal of the rejection.

In view of at least the foregoing, Applicant respectfully submits that this application is in condition for allowance. Applicant earnestly solicits favorable reconsideration and prompt allowance of claims 1-16.

Should the Examiner believe that anything further would be desirable in order to place

this application in even better condition for allowance, Applicant invites the Examiner to

contact the undersigned at the telephone number set forth below.

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